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14. ABSTRACT Hill Air Force Base (AFB) proposes to construct new dormitories for 432 active duty enlisted United States Air Force (USAF) personnel, and a new dining hall for 774 active duty enlisted USAF personnel. Several existing dormitories and a dining hall would be demolished and then replaced in the same area on Hill AFB. The findings of this EA indicate that the proposed action would not have significant adverse effects on the human environment or any of the environmental resources as described in the EA. Therefore, it is concluded that a Finding of No Significant Impact is justified.						
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FINDING OF NO SIGNIFICANT IMPACT

1. **NAME OF ACTION:** Provide New Dormitories and Dining Hall at Hill Air Force Base (AFB), Utah.
2. **DESCRIPTION OF THE PROPOSED ACTION:** Hill AFB proposes to accommodate current United States Air Force (USAF) missions by providing new dormitories for 432 active duty enlisted USAF personnel on Hill AFB, and a new dining hall for 774 active duty enlisted USAF personnel. Several existing dormitories and a dining hall would be demolished and then replaced in the southern portion of Hill AFB. The proposed action would be located within the same 47 acre area where the current facilities exist.
3. **SELECTION CRITERIA:** The following criteria were used to assemble alternatives. The facilities that house and feed active duty enlisted USAF personnel on Hill AFB should:
 - comply with current USAF housing and health and safety standards;
 - have sufficient space to accommodate a total of 774 active duty enlisted USAF personnel;
 - be located on Hill AFB; and
 - be protective of facilities, human health, and the environment.
4. **ALTERNATIVES CONSIDERED OTHER THAN THE PROPOSED ACTION:**

Under the no action alternative, the existing dormitories and dining hall would not be demolished, and the new dormitories and dining hall would not be constructed. The dormitories and dining hall would not comply with current USAF standards.

Renovating the dormitories would not accommodate the number of personnel assigned to Hill AFB. Because the estimated cost for this alternative exceeded 50 percent of the real property value of the existing facilities (both for the dormitories and for the dining hall), pursuing this alternative would violate current USAF real property policies.

Billeting active duty enlisted USAF personnel off base, in the surrounding communities, was considered cost prohibitive, and would not provide desired proximity to USAF-provided services, such as the enlisted dining hall, medical services, base exchange, and recreational facilities for airmen and junior-level non-commissioned officers.

Potential locations for the proposed dormitories and dining hall were evaluated in a master plan following USAF planning guidelines. The plan failed to identify any other locations compliant with USAF-required anti-terrorism set back requirements and desired proximity to medical, shopping, and recreational services.

5. SUMMARY OF ANTICIPATED ENVIRONMENTAL EFFECTS:

Issue	Alternative A No Action	Alternative B Proposed Action
Air Quality	No effects	Construction equipment would create temporary emissions. Fugitive dust emissions would be mitigated. Air emissions from the natural gas fired furnace would be less than 1.2 tons per year for each criteria pollutant and for hazardous air pollutants (HAPs).
Solid and Hazardous Waste	No effects	If contaminated soils are identified, they would be properly handled during the construction process. Operational activities would generate uncontaminated trash and domestic sewage. Solid and liquid wastes containing regulated substances would all be properly contained, stored, transported, disposed, re-used, and/or recycled. Wastewater would be treated North Davis Sewer District (NDSD).
Biological Resources	No effects	Site habitat has been previously affected by human activities and is now classified as improved (urban). The proposed action would temporarily remove much of the irrigated turf, hedges, and gardens currently present, thereby reducing the forage area for birds and displace rodents. It is hoped that many of the existing trees would be preserved. If any protected nesting birds should exist adjacent to construction activities, a certificate of registration would have to be obtained. The proposed action would include replacing irrigated turf, hedges, and gardens. Any trees that could not be preserved would be replaced.
Water Quality	No effects	During construction and operations, water quality would be protected by implementing stormwater management practices. Predevelopment hydrologic characteristics would be preserved.

6. FINDING OF NO SIGNIFICANT IMPACT: Based on the above considerations, a Finding of No Significant Impact (FONSI) is appropriate for this assessment.

Approved by:

 FOR
HARRY BRIESMASTER III, YF-03, DAF
Director, 75th Civil Engineer Group

Date: 20090709



Hill Air Force Base, Utah

Final

**Environmental Assessment:
Proposed Dormitories and Dining Hall,
Hill Air Force Base, Utah**

July 9, 2009

Final
**Environmental Assessment (EA):
Proposed Dormitories and Dining Hall,
Hill Air Force Base, Utah**

Contract F42650-03-D-0007, Delivery Order #0033

**Department of the Air Force
Air Force Materiel Command
Hill Air Force Base, Utah 84056**

July 9, 2009

Prepared in accordance with the Department of the Air Force Environmental Impact Analysis Process (EIAP) 32 CFR Part 989, Effective July 6, 1999, which implements the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) regulations.

EXECUTIVE SUMMARY

Purpose and Need

The purpose of the proposed action is to provide new dormitories for 432 active duty enlisted United States Air Force (USAF) personnel on Hill Air Force Base (AFB), and a new dining hall for 774 active duty enlisted USAF personnel. Several existing dormitories and a dining hall would be demolished and then replaced in the same area on AFB.

The proposed action is needed because the existing facilities do not comply with current USAF standards. The existing dormitories were built to the standards of their time (approximately 20 years ago), which was two airmen sharing one bedroom and four airmen sharing one bathroom. About ten years ago, the Pentagon directed each airman, because of the increasingly stressful nature of duties assigned, would be provided his own bedroom, and would have his own bathroom. Each Air Force Base would need to comply as best it could to this directive until such time as funds were available to replace the dorms not meeting this standard. Hill AFB dorm managers currently assign one airman to each bedroom, which cuts capacity in half. It also means that two airmen must still share one bathroom.

Since the outbreak of the war in Afghanistan and Iraq, USAF has made it a top priority to care for enlisted personnel by complying with the directive of providing to each airman a minimum 140 square-foot bedroom with a walk-in closet, and a full bath of at least 35 square feet. The directive includes four airmen sharing a kitchen, laundry facilities, and common lounge area. The new facilities being proposed at Hill AFB comply with the new directive.

The existing dining hall will not accommodate the increasing numbers of enlisted personnel necessary to perform mission requirements assigned to Hill AFB. Hill AFB bioenvironmental engineers have identified health and safety deficiencies for the dining hall's ventilation system and grease traps. The existing structure does not meet current fire protection standards.

Scope of Review

During a scoping meeting and subsequent interactions, the following environmental issues were addressed:

- air quality,
- solid and hazardous wastes (including liquid waste streams),
- biological resources,
- geology and surface soils,
- water quality,
- cultural resources,
- occupational safety and health,
- air installation compatible use zone (AICUZ), and

- socioeconomic resources.

As explained in the body of this document, the issues that were identified for detailed consideration are: air quality, solid and hazardous wastes (including liquid waste streams), biological resources, and water quality.

Selection Criteria

The facilities that house and feed active duty enlisted USAF personnel on Hill AFB described in this document should:

- comply with current USAF housing and health and safety standards;
- have sufficient space to accommodate a total of 774 active duty enlisted USAF personnel;
- be located on Hill AFB; and
- be protective of facilities, human health, and the environment.

Alternatives Considered in Detail

Alternative A (No Action Alternative) - Under the no action alternative, the existing dormitories and dining hall would not be demolished, and the new dormitories and dining hall would not be constructed. The dormitories and dining hall would not comply with current USAF standards.

Alternative B (Proposed Action - Provide New Dormitories and Dining Hall) - The proposed dormitories and dining hall would be located within the same 47 acre area where the current facilities exist, near the southern boundary of Hill AFB. The components of the proposed action would include:

- demolishing three dormitories and a dining hall;
- constructing three new dormitory buildings and one new dining hall;
- relocating Building 366 to an existing building pad;
- replacing parking spaces in kind;
- providing basketball courts, volleyball pits, landscaping, and sidewalks;
- establishing connections to existing buried utilities;
- re-routing underground utilities in the area; and
- either protecting or properly abandoning one groundwater monitoring well.

Decisions That Must Be Made

Hill AFB must decide whether to:

- not replace the dormitories and dining hall (no action), or
- replace the dormitories and dining hall.

- If the decision is to replace the dormitories and dining hall, then a decision must be made as to where the facilities will be located.

If Hill AFB decides to replace the dormitories and dining hall, the proponent and environmental managers would then decide what mitigation and/or monitoring measures, if any, should be implemented.

Results of the Environmental Assessment

Alternatives A and B were considered in detail. The results of the environmental assessment are summarized in the following table.

Summary Comparison of Alternatives

Issue	Alternative A No Action	Alternative B Proposed Action
Air Quality	No effects	Construction equipment would create temporary emissions. Fugitive dust emissions would be mitigated. Air emissions from the natural gas fired furnace would be less than 1.2 tons per year for each criteria pollutant and for hazardous air pollutants (HAPs).
Solid and Hazardous Waste	No effects	If contaminated soils are identified, they would be properly handled during the construction process. Operational activities would generate uncontaminated trash and domestic sewage. Solid and liquid wastes containing regulated substances would all be properly contained, stored, transported, disposed, re-used, and/or recycled. Wastewater would be treated North Davis Sewer District (NDSD).
Biological Resources	No effects	Site habitat has been previously affected by human activities and is now classified as improved (urban). The proposed action would temporarily remove much of the irrigated turf, hedges, and gardens currently present, thereby reducing the forage area for birds and displace rodents. It is hoped that many of the existing trees would be preserved. If any protected nesting birds should exist adjacent to construction activities, a certificate of registration would have to be obtained. The proposed action would include replacing irrigated turf, hedges, and gardens. Any trees that could not be preserved would be replaced.
Water Quality	No effects	During construction and operations, water quality would be protected by implementing stormwater management practices. Predevelopment hydrologic characteristics would be preserved.

Identification of the Preferred Alternative

Hill AFB prefers Alternative B (the proposed action).

TABLE OF CONTENTS

1	Purpose of and Need for Action.....	1
1.1	Introduction.....	1
1.2	Purpose of the Action.....	1
1.3	Need for the Action.....	1
1.4	Alternative Selection Criteria	4
1.5	Relevant Plans, EISs, EAs, Laws, Regulations, and Other Documents	5
1.6	Decisions That Must Be Made.....	6
1.7	Scope of this Environmental Analysis	7
1.7.1	History of the Planning and Scoping Process	7
1.7.2	Issues Studied in Detail.....	7
1.7.3	Issues Eliminated From Further Study	9
1.8	Applicable Permits, Licenses, and Other Coordination Requirements.....	10
2.0	Alternatives, Including the Proposed Action.....	12
2.1	Introduction.....	12
2.2	Process Used to Develop the Alternatives	12
2.3	Description of Alternatives	12
2.3.1	Alternative A: No Action.....	12
2.3.2	Alternative B: Proposed Action - Replace Dormitories and Dining Hall.....	12
2.3.3	Alternatives Eliminated From Detailed Study	13
2.3.3.1	Renovating	13
2.3.3.2	Other Locations.....	13
2.4	Summary Comparison of Alternatives and Predicted Achievement of Project Objectives	14
2.4.1	Summary Comparison of Alternatives.....	14
2.4.2	Summary Comparison of Predicted Achievement of Project Objectives ..	14
2.5	Identification of the Preferred Alternative.....	14
3.0	Affected Environment	15
3.1	Introduction.....	15
3.2	Description of Relevant Facilities and Operations	15
3.3	Description of Relevant Affected Issues.....	15
3.3.1	Air Quality	15
3.3.2	Solid and Hazardous Wastes.....	18
3.3.3	Biological Resources	18
3.3.4	Water Quality.....	19
3.4	Description of Relevant Pre-Existing Environmental Factors.....	20
3.5	Description of Areas Related to Cumulative Effects	20

4.0	Environmental Consequences.....	21
4.1	Introduction.....	21
4.2	Predicted Effects to Relevant Affected Resources of All Alternatives	21
4.2.1	Predicted Effects to Air Quality.....	21
4.2.1.1	Alternative A: No Action.....	21
4.2.1.2	Alternative B (Proposed Action): Replace Dormitories and Dining Hall.....	21
4.2.2	Predicted Effects to Solid and Hazardous Waste.....	24
4.2.2.1	Alternative A: No Action.....	24
4.2.2.2	Alternative B (Proposed Action): Replace Dormitories and Dining Hall.....	24
4.2.3	Predicted Effects to Biological Resources.....	26
4.2.3.1	Alternative A: No Action.....	26
4.2.3.2	Alternative B (Proposed Action): Replace Dormitories and Dining Hall.....	26
4.2.4	Predicted Effects to Water Quality	27
4.2.4.1	Alternative A: No Action.....	27
4.2.4.2	Alternative B (Proposed Action): Replace Dormitories and Dining Hall.....	27
4.3	Summary Comparison of Predicted Environmental Effects.....	29
5.0	List of Preparers	30
6.0	List of Persons and Agencies Consulted	31
7.0	References.....	32

LIST OF FIGURES

Figure 1: Location of the Proposed Action on Hill AFB.....	2
Figure 2: Existing Dormitories and Dining Hall to Be Demolished.....	3
Figure 3: State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance	16
Figure 4: State of Utah Areas of Non-Attainment for PM-2.5	17

LIST OF TABLES

Table 1: Summary Comparison of Predicted Achievement of Project Objectives.....	14
Table 2: Baseline Criteria Pollutants and HAPs (tons/year).....	18
Table 3: Birds That Could Occupy Trees of Hill AFB Urban Forest.....	19
Table 4: Calculated Heavy Equipment Emissions.....	22
Table 5: Calculated Operational Emissions.....	23
Table 6: Summary Comparison of Predicted Environmental Effects.....	29

LIST OF APPENDICES

Appendix A: Cultural Resources Finding of No Adverse Effect	
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LIST OF ACRONYMS AND CHEMICAL TERMS

AFB	Air Force Base
AFOSH	Air Force Occupational Safety and Health
AICUZ	Air Installation Compatible Use Zone
ALC	Air Logistics Center
APE	Area of Potential Effect
bgs	Below the Ground Surface
BTU	British Thermal Unit
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
DAQ	Division of Air Quality (Utah)
dBA	Decibel (A-weighted)
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EPA	Environmental Protection Agency (United States)
FONSI	Finding of No Significant Impact
HAP	Hazardous Air Pollutant
MBTA	Migratory Bird Treaty Act
MILCON	Military Construction
MMSCF	Million Standard Cubic Feet
MS4	Municipal Separate Storm Sewer Systems
NAAQS	National Ambient Air Quality Standards
NDSD	North Davis Sewer District
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO _x	Oxides of Nitrogen

NRHP	National Register of Historic Places
O ₃	Ozone
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PM-10	Particulates Smaller Than 10 Microns in Diameter
PM-2.5	Particulates Smaller Than 2.5 Microns in Diameter
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SOC	Species of Concern (State of Utah)
SO _x	Oxides of Sulfur
SWPPP	Stormwater Pollution Prevention Plan
UAC	Utah Administrative Code
UPDES	Utah Pollutant Discharge Elimination System
USAF	United States Air Force
USC	United States Code
VOC	Volatile Organic Compound
WFRC	Wasatch Front Regional Council

1 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

Hill Air Force Base (AFB) is located approximately 25 miles north of downtown Salt Lake City and seven miles south of downtown Ogden, Utah (Figure 1). Hill AFB is surrounded by several communities: Roy and Riverdale to the north; South Weber to the northeast; Layton to the south; and Clearfield, Sunset, and Clinton to the west. The base lies primarily in northern Davis County with a small portion located in southern Weber County.

Hill AFB is an Air Logistics Center (ALC) that maintains aircraft, missiles, and munitions for the United States Air Force (USAF). In support of that mission, Hill AFB: provides worldwide engineering and logistics management for the F-16 Fighting Falcon and A-10 Thunderbolt; accomplishes depot repair, modification, and maintenance of the F-16, A-10 Thunderbolt, and C-130 Hercules aircraft; and overhauls and repairs landing gear, wheels and brakes for military aircraft, rocket motors, air munitions, guided bombs, photonics equipment, training devices, avionics, instruments, hydraulics, software, and other aerospace-related components.

The existing Hill AFB dormitories and dining hall (Figure 2) house and feed 774 active duty enlisted USAF personnel.

1.2 Purpose of the Action

The purpose of the proposed action is to provide new dormitories for 432 active duty enlisted USAF personnel on Hill AFB, and a new dining hall for 774 active duty enlisted USAF personnel. Several existing dormitories and a dining hall (Figure 2) would be demolished and then replaced in the same area on Hill AFB (Figure 3).

1.3 Need for the Action

The proposed action is needed because the existing facilities do not comply with current USAF standards.

The existing dormitories were built to the standards of their time (approximately 20 years ago), which was two airmen sharing one bedroom and four airmen sharing one bathroom. About ten years ago, the Pentagon directed each airman, because of the increasingly stressful nature of duties assigned, would be provided his own bedroom, and would have his own bathroom. Each Air Force Base would need to comply as best it could to this directive until such time as funds were available to replace the dorms not meeting this standard. Hill AFB dorm managers currently assign one airman to each bedroom, which cuts capacity in half. It also means that two airmen must still share one bathroom.

Since the outbreak of the war in Afghanistan and Iraq, USAF has made it a top priority to care for enlisted personnel by complying with the directive of providing to each airman a minimum 140 square-foot bedroom with a walk-in closet, and a full bath of at least 35 square feet. The directive includes four airmen sharing a kitchen, laundry facilities, and common lounge area. The new facilities being proposed at Hill AFB comply with the new directive.

The existing dining hall will not accommodate the increasing numbers of enlisted personnel necessary to perform mission requirements assigned to Hill AFB. Hill AFB bioenvironmental engineers have identified health and safety deficiencies for the dining hall's ventilation system and grease traps. The existing structure does not meet current fire protection standards.

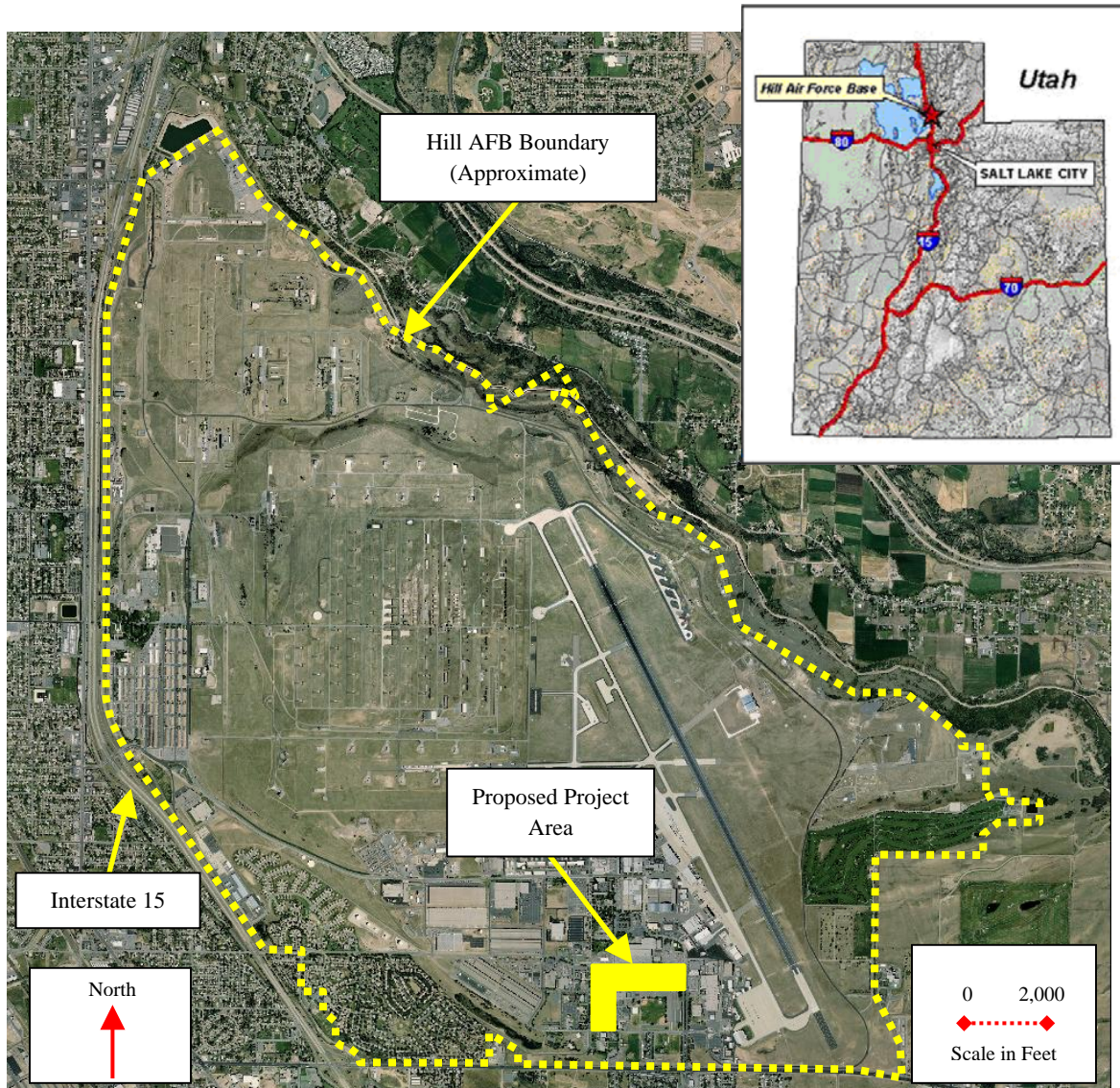


Figure 1: Location of the Proposed Action on Hill AFB

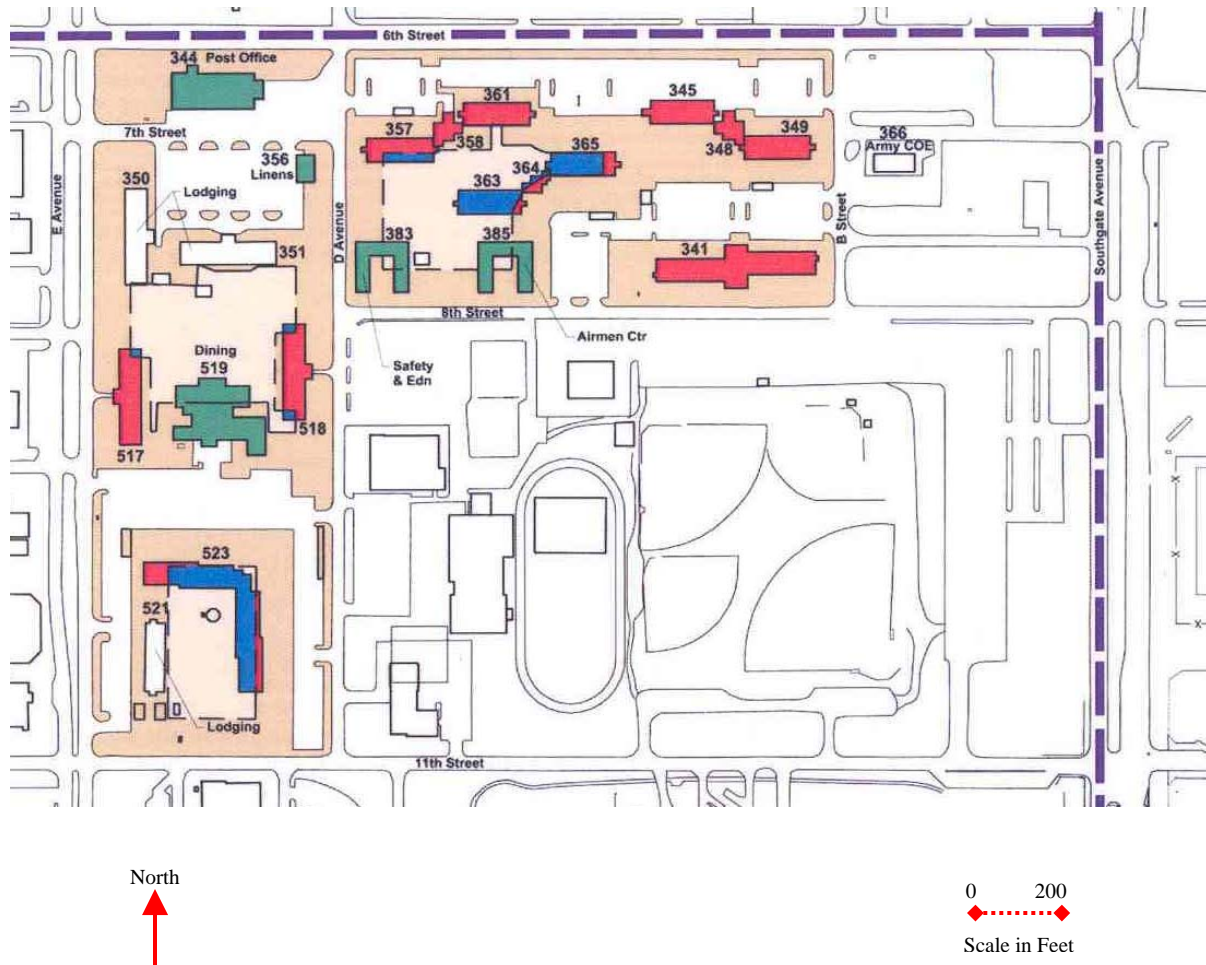


Figure 2: Existing Dormitories and Dining Hall to Be Demolished

Note: See Section 2.3.2 for an itemized listing of structures to be demolished by building number

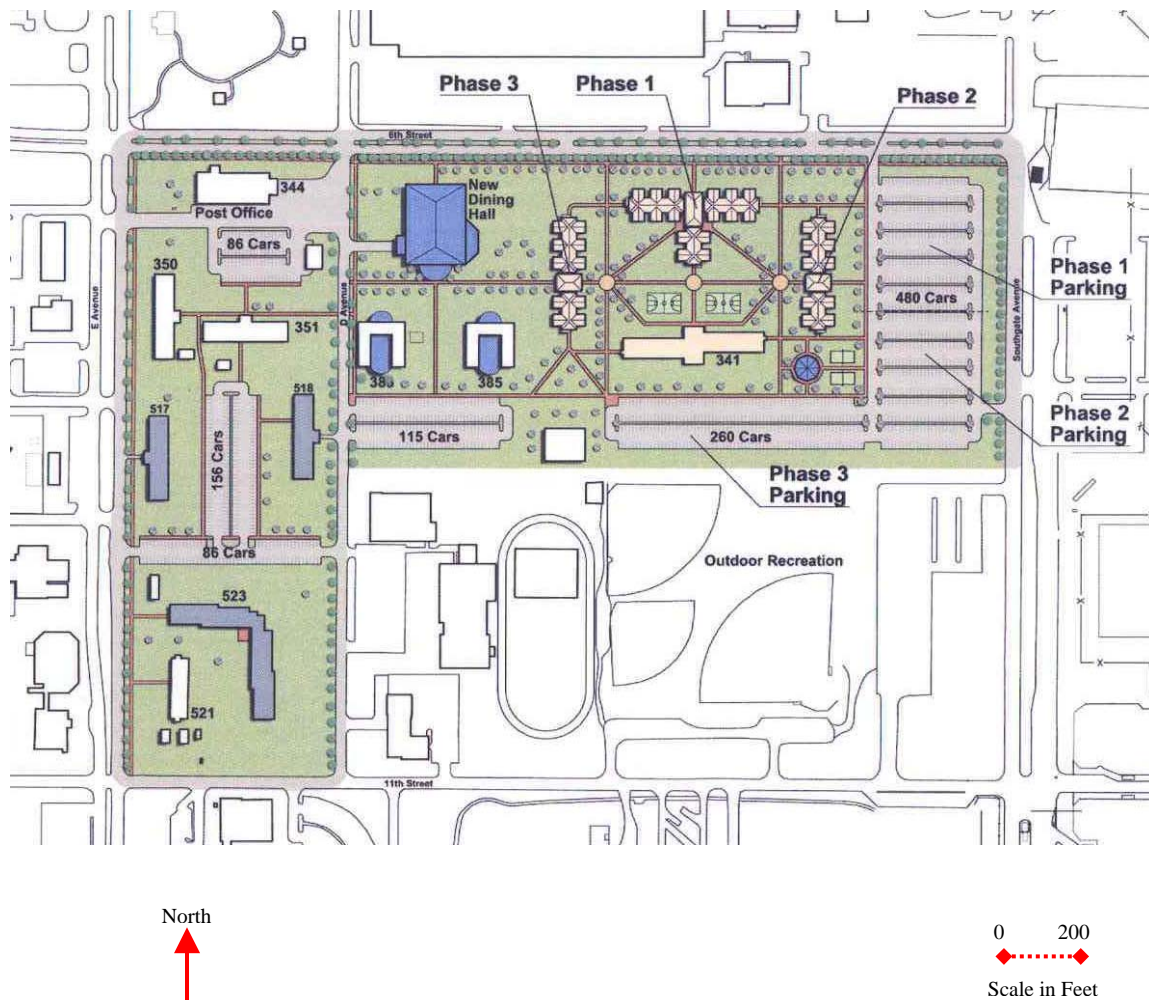


Figure 3: Layout of Proposed Dormitories and Dining Hall

1.4 Alternative Selection Criteria

Due to the considerations presented in the preceding sections, the following selection criteria were established. The facilities that house and feed active duty enlisted USAF personnel on Hill AFB described in this document should:

- comply with current USAF housing and health and safety standards;
- have sufficient space to accommodate a total of 774 active duty enlisted USAF personnel;

- be located on Hill AFB; and
- be protective of facilities, human health, and the environment.

1.5 Relevant Plans, EISs, EAs, Laws, Regulations, and Other Documents

During the scoping process, no relevant plans, environmental impact statements (EISs), or environmental assessments (EAs) were identified.

The following federal, state, and local laws, and regulations would apply to the proposed action:

- The National Environmental Policy Act (NEPA), Title 42 of the United States Code (USC) Section 4321 *et seq.*
- Council on Environmental Quality regulations, Title 40 of the Code of Federal Regulations (CFR) Parts 1500-1508.
- USAF-specific requirements contained in 32 CFR Part 989, Environmental Impact Analysis Process (EIAP).
- Safety guidelines of the Occupational Safety and Health Administration (OSHA).
- Relevant Air Force Occupational Safety and Health (AFOSH) standards.
- Utah's fugitive emissions and fugitive dust rules (Utah Administrative Code [UAC] Section R307-309).
- Utah's State Implementation Plan (UAC Section R307-110), which complies with the General Conformity Rule of the Clean Air Act (CAA), Section 176 (c).
- Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 CFR Part 93.154.
- US Air Force *Conformity Guide*, 1995.
- Utah Asbestos Rules, UAC, Section R307-801.
- The Resource Conservation and Recovery Act (RCRA), 42 USC Chapter 82, and regulations promulgated thereunder, 40 CFR Part 260 *et seq.*
- Federal facility agreement dated April 10, 1991 under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 USC Section 9601 *et seq.*
- Utah hazardous waste management regulations contained in UAC Section R315, and the Hill AFB *Hazardous Waste Management Plan* dated May, 2001, and subsequent versions.
- The Clean Water Act (CWA), 33 USC Section 1251 *et seq.*

- The Energy Independence and Security Act (EISA) of 2007, Sec. 438, Storm Water Runoff Requirements for Federal Development Projects, *et seq.*
- The Hill AFB *Stormwater Management Plan - Municipal Stormwater Permit*, dated April, 2007, and subsequent versions.
- Migratory Bird Treaty Act (MBTA), 16 USC Sections 703-712 *et seq.*
- The Hill AFB *Integrated Natural Resources Management Plan*, dated August, 2007, and subsequent versions.
- The Hill AFB *Integrated Cultural Resources Management Plan*, dated January, 2007, and subsequent versions.
- The National Historic Preservation Act (NHPA), 16 USC Section 470 *et seq.*

During the scoping process, no other documents were identified as being relevant to the proposed action.

1.6 Decisions That Must Be Made

Hill AFB must decide whether to:

- not replace the dormitories and dining hall (no action), or
- replace the dormitories and dining hall.
- If the decision is to replace the dormitories and dining hall, then a decision must be made as to where the facilities will be located.

Renovating the existing dormitories and dining hall was considered and eliminated by the Hill AFB planners and engineers. Renovating the dormitories would not accommodate the number of personnel assigned to Hill AFB. Because the estimated cost for this alternative exceeded 50 percent of the real property value of the existing facilities (both for the dormitories and for the dining hall), pursuing this alternative would violate current USAF real property policies.

If Hill AFB decides to replace the dormitories and dining hall, the proponent and environmental managers would then decide what mitigation and/or monitoring measures, if any, should be implemented.

If Hill AFB decides to replace the dormitories and dining hall, the base would then decide if the selected alternative would or would not be a major federal action significantly affecting the quality of the human environment. If judged as not significantly affecting the quality of the human environment, then a finding of no significant impact (FONSI) would be prepared and signed, and the project would proceed. If judged as significantly affecting the quality of the human environment, then an EIS and a record of decision (ROD) would have to be prepared and signed before the project could proceed.

1.7 Scope of this Environmental Analysis

The scope of the current environmental analysis is to explore environmental issues related to the proposed action (replace the dormitories and dining hall) and the reasonable alternatives identified within this document.

1.7.1 History of the Planning and Scoping Process

Scoping discussions were held: to identify potential environmental concerns; to facilitate an efficient environmental analysis process; to identify issues and alternatives that would be considered in detail while devoting less attention and time to less important issues; and to save time in the overall process by helping to ensure that draft documents would adequately address relevant issues, thereby reducing the time required to proceed to a final document.

On January 14, 2009, an initial scoping meeting was conducted in Building 5, Hill AFB. Attendees included proponents of the proposed action, managers of Hill AFB's NEPA program, other environmental program managers, and the authors of this document.

During this meeting and subsequent scoping interaction, the following environmental issues were addressed:

- air quality,
- solid and hazardous wastes (including liquid waste streams),
- biological resources,
- geology and surface soils,
- water quality,
- cultural resources,
- occupational safety and health,
- air installation compatible use zone (AICUZ), and
- socioeconomic resources.

1.7.2 Issues Studied in Detail

The issues that have been identified for detailed consideration and are therefore presented in Sections 3 and 4 are:

- **Air Quality** (attainment status, emissions, Utah’s state implementation plan [SIP])

Air emissions would be produced by construction equipment. Asbestos abatement could be required. Operating the proposed action would create air emissions. Air quality effects are discussed in Section 4 of this document.

- **Solid and Hazardous Wastes** (materials to be used, stored, recycled, or disposed, including liquid waste streams; existing asbestos, lead-based paint, mercury, and polychlorinated biphenyls [PCBs])

During construction, solid wastes would be generated, wastes containing asbestos and lead-based paint could be generated, and other hazardous wastes might be generated that would require proper treatment and/or disposal. Additional hazardous wastes could be generated if a spill of fuel, lubricants, or construction-related chemicals were to occur. For the purposes of this document, if the word construction is used by itself, any potential demolition activities are included.

Operating the proposed action would be expected to create solid, but not hazardous wastes (to include solid and liquid wastes). Effects related to solid and hazardous wastes are discussed in Section 4 of this document.

- **Biological Resources** (flora and fauna including threatened, endangered, sensitive species; wetlands; floodplains)

Approximately 47 acres of currently developed land would be disturbed by the proposed action. Much of this area is currently occupied by structures and various pavements.

Effects related to biological resources are discussed in Section 4 of this document.

- **Water Quality** (surface water, groundwater, water quantity, wellhead protection zones)

Based on Hill AFB estimates, the land area to be disturbed would be approximately 47 acres in size. The proposed action would be subject to stormwater permit requirements both during the construction period and during operations.

Contamination of groundwater is known to exist in the vicinity of the proposed action. Depth to groundwater is approximately 200 feet below the ground surface (bgs) in the vicinity of the proposed action. Since the proposed action would not require excavations deeper than 10 feet bgs, groundwater effects were not addressed in detail.

The scoping discussions did not identify any issues related to quantity of water or wellhead protection zones.

Effects related to water quality are discussed in Section 4 of this document.

Liquid waste streams created during construction and from operating the proposed action are included in the discussions related to solid and hazardous wastes (Section 4 of this document).

1.7.3 Issues Eliminated From Further Study

The issues that were not carried forward for detailed consideration in Sections 3 and 4 are:

- **Geology and Surface Soils** (seismicity, topography, minerals, geothermal resources, land disturbance, known pre-existing contamination)

The scoping discussions did not identify any issues related to seismicity, topography, minerals, or geothermal resources.

Excavations would be necessary to remove, relocate, and install: footings; foundations; and buried utilities consisting of water, electricity, telephone/data, natural gas, sanitary sewer, and storm drains. Discussions related to preventing soil erosion (stormwater pollution prevention) are addressed under water quality effects (Section 4 of this document).

Contamination of shallow soil is not known to exist in the vicinity of the proposed action. Potential discovery of suspicious soils during excavation is addressed under solid and hazardous wastes (Section 4 of this document).

- **Cultural Resources** (archaeological, architectural, traditional cultural properties)

Of the ten buildings to be demolished (see Section 2.3.2), Building 519 has been determined ineligible for the National Register of Historic Places (NRHP), and the other nine buildings are not yet historic structures.

No significant cultural resources have been identified in the area of potential effect (APE) for the proposed action. Three previous inventories for archaeological resources were conducted on Hill AFB in 1991, 1995, and 2001, comprising 840 acres total. This has resulted in the survey of 12.5 percent of the total area of Hill AFB. Results from these projects included the recordation of one historic refuse dump and two prehistoric isolates, all determined ineligible for listing in the NRHP. None of the previous inventories included the APE of the proposed action. Given the lack of previous findings and the extensive development and disturbance of Hill AFB, the potential for historic properties is extremely low. However, if any are found during construction, ground-disturbing activities in the immediate vicinity will cease, the Hill AFB Cultural Resources Program will be notified, and unanticipated discovery of archaeological deposits procedures will be implemented with direction from the Hill AFB Cultural Resources Program in accordance with Standard Operating Procedure 5 in the Hill AFB *Integrated Cultural Resources Management Plan* (Hill 2007a). The Utah State Historic Preservation Office (SHPO) concurred with a finding of no adverse effect after reviewing the proposed action (Appendix A). Hill AFB has determined formal consultation with American Indian Tribes is not warranted

given the absence of resources that may be reasonably construed as being of interest to them.

- **Occupational Safety and Health** (physical and chemical hazards, radiation, explosives, bird and wildlife hazards to aircraft)

Throughout the construction phase of the project, Hill AFB contractors would follow OSHA safety guidelines as presented in the CFR. Hazardous materials that could be used during construction are included in the discussions related to solid and hazardous wastes (Section 4 of this document).

Related to Hill AFB military personnel and civilian employees, the Bio-environmental Engineering Flight (75 AMDS/SGPB) is responsible for implementing AFOSH standards. The AFOSH program addresses (partial list): hazard abatement, hazard communication, training, personal protective equipment and other controls to ensure that occupational exposures to hazardous agents do not adversely affect health and safety, and acquisition of new systems.

The scoping discussions did not identify any issues related to occupational safety and health that would not be routinely addressed by OSHA rules and/or the Bio-engineering Flight.

- **AICUZ** (noise, accident potential, airfield encroachment)

The proposed action would be outside (less than) the 85 A-weighted decibel (dBA) noise level zone (documented in the current version of the Hill AFB AICUZ report).

The scoping discussions did not identify any issues related to aircraft accident potential or airfield encroachment.

- **Socioeconomic Resources** (local fiscal effects including employment, population projections, and schools)

Opportunities would exist for local construction workers if the proposed action is constructed. The proposed action is not expected to create additional permanent jobs at Hill AFB. The proposed action would house 198 fewer active duty enlisted USAF personnel on Hill AFB compared to current levels. The scoping discussions did not identify any other issues related to population projections or schools.

1.8 Applicable Permits, Licenses, and Other Coordination Requirements

Obtaining, modifying, and/or complying with the following permits would be required to implement the proposed action.

- The Hill AFB Title V Operating Permit (Permit Number: 1100007001, and subsequent versions).

- Prior to beginning any asbestos abatement efforts, a notification of at least 10 working days would be provided to DAQ.
- Industrial pretreatment permit number 110 issued by the North Davis Sewer District (NDSD), dated November 1, 2007, and subsequent versions.
- General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity permit number UTR000444, which expired December 2007 (but will be valid until a new permit is issued, the application for which has been submitted), and subsequent versions.
- Requirements specified in Utah's Storm Water General Permit for Construction Activities.
- The Hill AFB *Stormwater Management Plan - Municipal Stormwater Permit*, dated April, 2007, and subsequent versions.
- Utah Pollutant Discharge Elimination System (UPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), permit number UTR090028, which expired December 2007 (but will be valid until a new permit is issued, the application for which has been submitted), and subsequent versions.

The proponents would coordinate with the Hill AFB hazardous materials program manager (75 CEG/CEVC) to discuss hazardous materials brought on base to construct the proposed action.

2.0 ALTERNATIVES, INCLUDING THE PROPOSED ACTION

2.1 Introduction

This section discusses the process used to develop the alternatives, describes the alternatives, and compares (in a brief summary fashion) the alternatives and their expected effects. Finally, this section states the Air Force's preferred alternative.

2.2 Process Used to Develop the Alternatives

As discussed in Sections 1.3 and 1.4 of this document, Hill AFB intends to replace several existing dormitories and the dining hall. The proposed facilities described in this document, combined with other dormitories not being replaced, would comply with all relevant design standards and would have sufficient space to house and feed 774 active duty enlisted USAF personnel on Hill AFB.

Hill AFB planners and engineers investigated renovating the existing facilities (see Section 2.3.3.1), and other potential locations for siting the proposed dormitories and dining hall (see Section 2.3.3.2).

2.3 Description of Alternatives

2.3.1 Alternative A: No Action

Under the no action alternative, the existing dormitories and dining hall would not be demolished, and the new dormitories and dining hall would not be constructed. The dormitories and dining hall would not comply with current USAF standards.

2.3.2 Alternative B: Proposed Action - Replace Dormitories and Dining Hall

The proposed action is to replace several existing dormitories and dining hall near the southern boundary of Hill AFB (Figures 1, 2, and 3). The proposed action would consist of:

- Demolishing these existing dormitories and the dining hall.

<u>Building</u>	<u>Current Use</u>
345	Dormitory Wing
348	Day Room
349	Dormitory Wing
357	Dormitory Wing
358	Day Room
361	Dormitory Wing
363	Dormitory Wing
364	Day Room
365	Dormitory Wing
519	Dining Hall

- Constructing three new dormitory buildings and one new dining hall, with a total footprint of 53,386 square feet. Each dormitory would be three stories tall. The dining hall would be a single story structure. The construction would be steel frame with masonry veneer wall and a standing seam metal roof. Each building would contain one natural gas fired boiler to supply hot water and heat. It is anticipated that the ground floor of each facility would be slab-on-grade, but partial basements may be required for mechanical equipment, boilers, and storage rooms.
- Relocating Building 366 (owned and operated by the United States Army) to an existing non-vegetated building pad located where Building 1146 was previously sited.
- Relocating, but supplying approximately the same number of parking spaces as currently exist for the dormitories and dining hall.
- Providing approximately 30 acres of basketball courts, volleyball pits, landscaping, and sidewalks.
- Establishing connections to existing buried utilities consisting of water, electricity, telephone/data, natural gas, sanitary sewer, and storm drains.
- Re-routing underground water lines, natural gas lines, electrical lines, telephone/data lines, sanitary sewer collection lines and manholes, and storm water drains, collection lines and manholes.
- Either protecting or properly abandoning one groundwater monitoring well.

2.3.3 Alternatives Eliminated From Detailed Study

2.3.3.1 Renovating

Hill AFB planners and engineers considered, but eliminated, an alternative for renovating the existing facilities to comply with the new standard. Renovating the dormitories would not accommodate the number of personnel assigned to Hill AFB. Because the estimated cost for this alternative exceeded 50 percent of the real property value of the existing facilities (both for the dormitories and for the dining hall), pursuing this alternative would violate current USAF real property policies.

2.3.3.2 Other Locations

When Hill AFB planners and engineers considered potential facility locations, no other site was determined to be satisfactory for the reasons stated below.

Billeting active duty enlisted USAF personnel off base, in the surrounding communities, was considered cost prohibitive, and would not provide desired proximity to USAF-provided services, such as the enlisted dining hall, medical services, base exchange, and recreational facilities for airmen and junior-level non-commissioned officers.

Hill AFB planners and engineers attempted to identify alternative on-base locations for the dormitories and dining hall. Potential locations for the proposed dormitories and dining hall were evaluated in a master plan prepared by an engineering firm hired by Headquarters, USAF. The plan followed USAF planning guidelines to locate dormitories in the same general area as the enlisted dining hall, medical services, base exchange, fitness center, theater, and library. The selected site also complies with current anti-terrorism set back requirements. The plan tried, but failed, to identify any other base locations compliant with USAF-required security measures, and no other location provided the desired proximity to the USAF-provided services described above.

2.4 Summary Comparison of Alternatives and Predicted Achievement of Project Objectives

2.4.1 Summary Comparison of Alternatives

The no action alternative would be to continue current operations using the existing dormitories and dining hall, which do not comply with current USAF housing and health and safety standards.

Under Alternative B (proposed action) existing dormitories and a dining hall would be demolished and then replaced in the same area on Hill AFB. The new facilities, combined with other dormitories not being replaced, would accommodate the desired number of 774 active duty enlisted USAF personnel.

2.4.2 Summary Comparison of Predicted Achievement of Project Objectives

Description of the Project Objective	Alternative A (No Action)	Alternative B (Proposed Action)
Comply with current USAF housing and health and safety standards	No	Yes
Have sufficient space to accommodate a total of 774 active duty enlisted USAF personnel	Yes	Yes
Be located on Hill AFB	Yes	Yes
Be protective of facilities, human health, and the environment	No	Yes

Table 1: Summary Comparison of Predicted Achievement of Project Objectives

2.5 Identification of the Preferred Alternative

Hill AFB prefers Alternative B (the proposed action).

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

Section 3 of this document discusses the existing conditions of the potentially affected environment, establishing a resource baseline against which the effects of the various alternatives can be evaluated. It presents relevant facilities and operations, environmental issues, pre-existing environmental factors, and existing cumulative effects due to human activities in the vicinity of the proposed action or the alternative locations.

Issues discussed during scoping meetings, but eliminated from detailed consideration (see Section 1.7.3) include:

- geology and surface soils (seismicity, topography, minerals, geothermal resources, land disturbance, known pre-existing contamination);
- cultural resources (archaeological, architectural, traditional cultural properties);
- occupational safety and health (physical and chemical hazards, radiation, explosives, bird and wildlife hazards to aircraft);
- AICUZ (noise, accident potential, airfield encroachment); and
- socioeconomic resources (local fiscal effects including employment, population projections, and schools).

3.2 Description of Relevant Facilities and Operations

Several of the existing dormitories do not comply with current USAF housing standards. The existing dining hall does not comply with current USAF health and safety standards, and future capacity shortfalls are projected. Nearby facilities (medical services, base exchange, fitness center, theater, and library) exist to serve enlisted personnel. No other relevant facilities or operations were identified.

3.3 Description of Relevant Affected Issues

3.3.1 Air Quality

Hill AFB is located in Davis and Weber Counties, Utah. Neither county is in complete attainment status with federal clean air standards (Figures 3 and 4). Non-attainment areas fail to meet national ambient air quality standards (NAAQS) for one or more of the criteria pollutants: oxides of nitrogen (NO_x), sulfur dioxide (SO₂), ozone (O₃), particulates less than 10 microns in diameter (PM-10), particulates less than 2.5 microns in diameter (PM-2.5), carbon monoxide (CO), and lead. Davis County (the county in which the proposed action lies) is currently awaiting non-attainment designations for ozone and for PM-2.5. Due to the ozone designation, emission offsets are required for new sources emitting NO_x and volatile organic compounds

(VOCs), which are precursors to ozone formation. Due to the PM-2.5 designation, Utah's Division of Air Quality (DAQ) must submit an implementation plan to the United States Environmental Protection Agency (EPA) for reducing concentrations of the five main types of pollutants contributing to fine particle concentrations in the non-attainment areas (the pollutants are direct PM-2.5 emissions, SO₂, NO_x, ammonia, and VOCs).

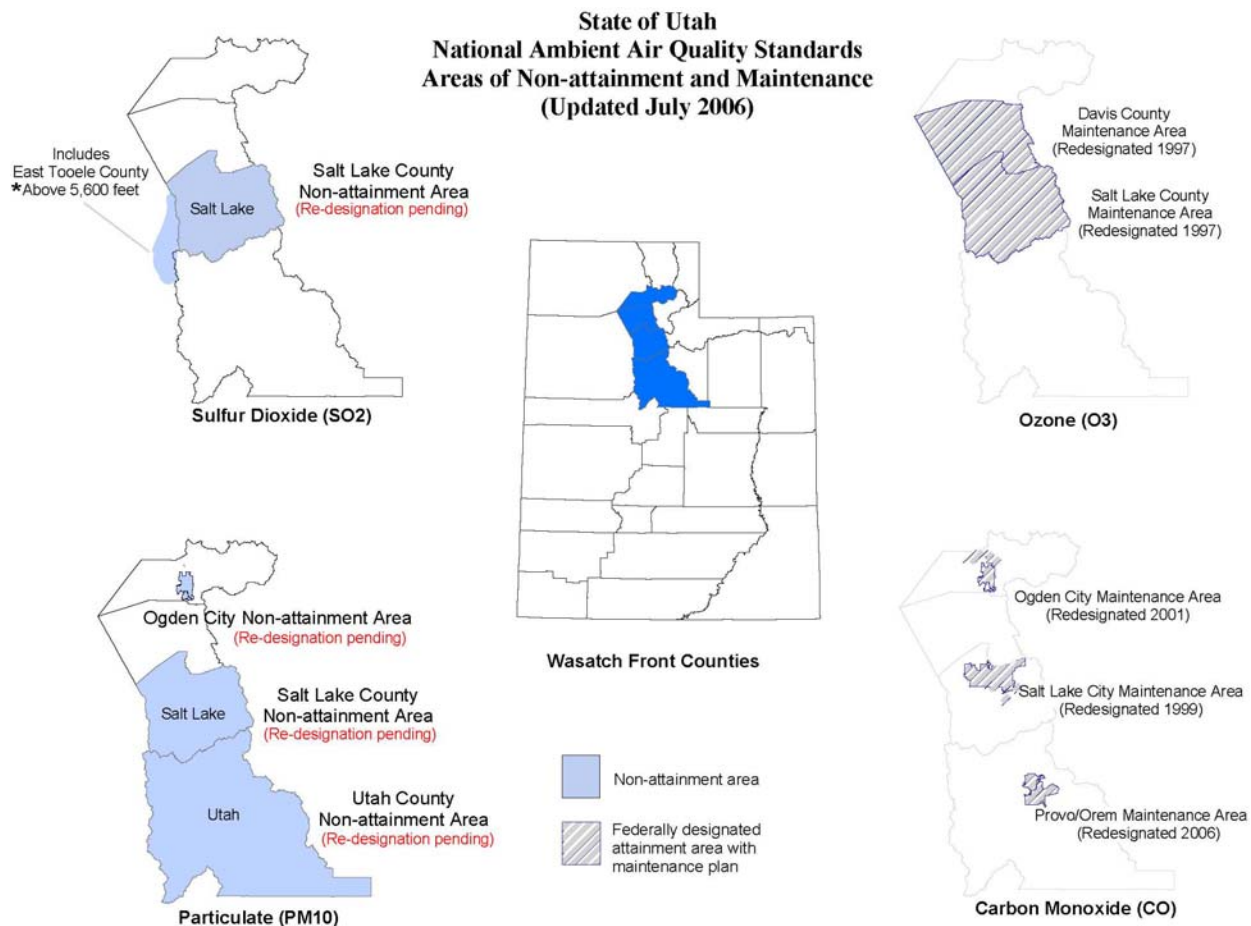


Figure 3: State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance

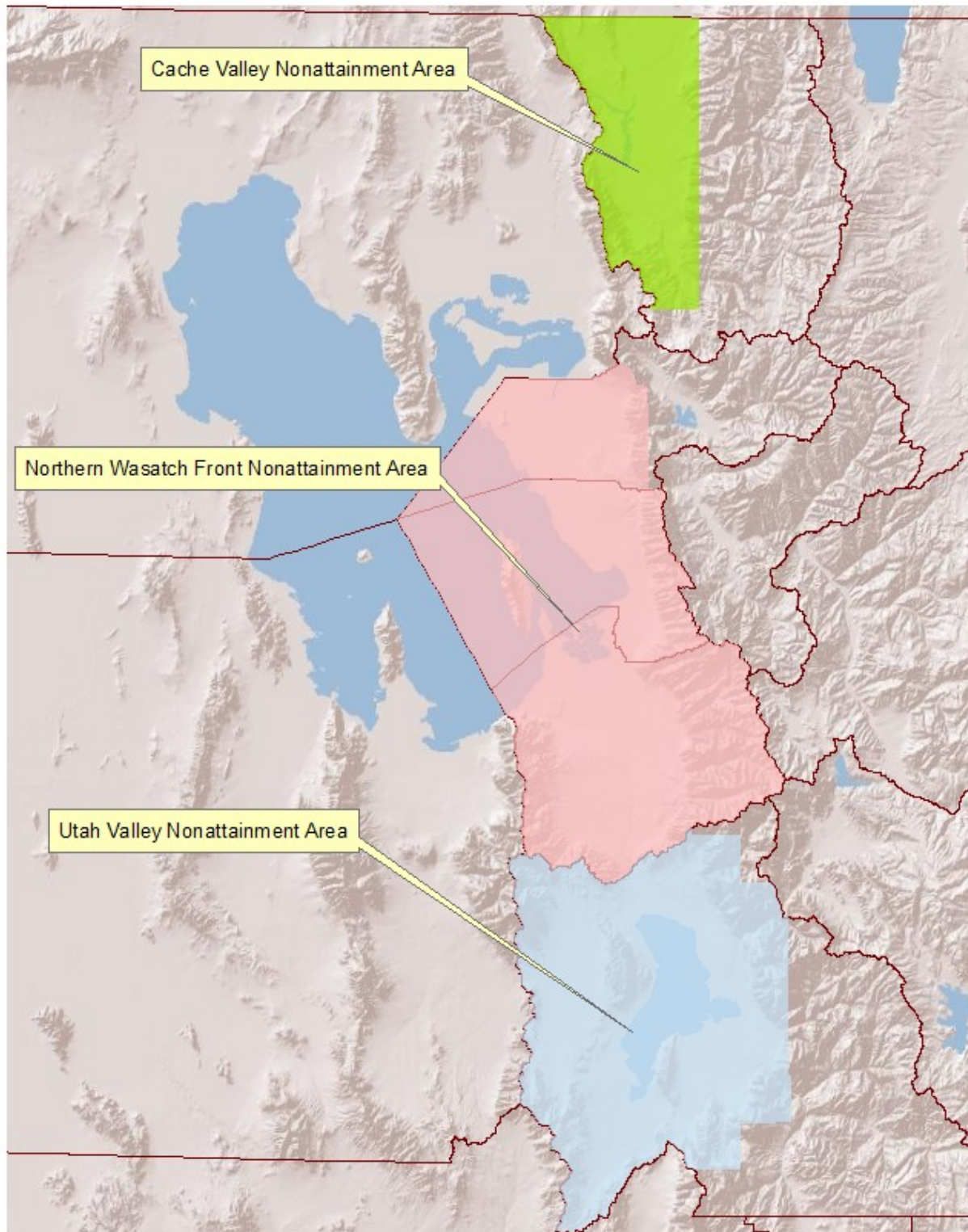


Figure 4: State of Utah Areas of Non-Attainment for PM-2.5

The current air quality trend at Hill AFB is one of controlling emissions as Hill AFB managers implement programs to eliminate ozone-depleting substances, limit use of VOCs, switch to lower

vapor pressure solvents and aircraft fuel, convert internal combustion engines from gasoline and diesel to natural gas, and improve the capture of particulates during painting and abrasive blasting operations (in compliance with the base's Title V air quality permit).

Published emission estimates are available for criteria air pollutants and hazardous air pollutants (HAPs) for Hill AFB (Hill 2009), and criteria air pollutants for Davis and Weber Counties (DAQ 2009b). The estimates, shown below in Table 2 were based on data from calendar year 2007 for Hill AFB, and for calendar year 2005 for Davis and Weber Counties.

Location	VOC	CO	NO _x	PM-10	HAP	SO _x
Hill AFB	278	225	244	41	41	7
Davis County	16,958	63,439	10,720	3,641	not reported	3,480
Weber County	14,796	47,956	6,868	2,882	not reported	238

Table 2: Baseline Criteria Pollutants and HAPs (tons/year)

3.3.2 Solid and Hazardous Wastes

In general, hazardous wastes include substances that, because of their concentration, physical, chemical, or other characteristics, may present substantial danger to public health or welfare or to the environment when released into the environment or otherwise improperly managed. Potentially hazardous and hazardous wastes generated at Hill AFB are managed as specified in the *Hill AFB Hazardous Waste Management Plan* with oversight by personnel from the Environmental Management Division and the Defense Reutilization and Marketing Office (DRMO). Hazardous wastes at Hill AFB are properly stored during characterization, and then manifested and transported off site for treatment and/or disposal.

Wastes created within the existing dormitories and dining hall are limited to uncontaminated office trash and domestic sewage. The dormitories and dining hall are connected to a sanitary sewer that flows to a sewage treatment plant operated by NDSD. A grease trap provides pretreatment for liquid effluent from the existing dining hall kitchen.

3.3.3 Biological Resources

No federal or state endangered or threatened species are known to occur on Hill AFB (Hill 2007b) and no likely habitat for any such species would be disturbed by the proposed action. Wildlife species that are federally listed, candidates for federal listing, or for which a conservation agreement is in place automatically qualify for the Utah sensitive species list. The additional species on the Utah sensitive species list, "wildlife species of concern," are those species for which there is credible scientific evidence to substantiate a threat to continued population viability. Two species on Utah's species of concern (SOC) list have been sighted on Hill AFB, the Long Billed Curlew and the Bobolink. Those sightings were unusual for these species and occurred during the fall migration. These species have not been observed in the vicinity of the proposed action. There are no wetlands or floodplains in the vicinity of the

alternatives discussed in this document. The alternatives discussed in this document are located in or near developed areas on Hill AFB.

The habitat within this 47-acre area is classified as improved (Hill AFB habitat descriptions [Hill 2007b]). This habitat is characterized by buildings permanent structures and pavements, as well as a varied mosaic of irrigated turf, planted shade trees, hedges, and gardens. This land use classification can include cantonment areas, parade grounds, drill fields, athletic fields, golf courses, cemeteries, and housing areas. Grass in these areas is normally maintained at a height of two to four inches during the growing season (Hill 2007b).

Improved habitats on Hill AFB include an extensive urban forest. Urban forests produced by man significantly out produce native species and provide foraging and nesting areas for birds and small mammals. Urban forests provide a cooling effect and aesthetic improvement. There are 519 trees consisting of 32 species that exist within the boundary of the proposed project area. These trees are calculated to be worth \$358,585 in monetary value as determined by the Hill AFB natural resources program.

Several species of small mammals occupy the improved habitats on Hill AFB. Various species of birds have been observed using the Hill AFB urban forest areas in the vicinity of the proposed action (see Table 3).

Common Name	Scientific Name
American Kestrel	<i>Falco sparverius</i>
American Robin	<i>Turdus migratorius</i>
Barn Swallow	<i>Hirundo rustica</i>
Black-billed Magpie	<i>Pica hudsonia</i>
Black-capped chickadee	<i>Poecile atricapilla</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>
Bullock's Oriole	<i>Icterus bullockii</i>
Common Raven	<i>Corvus corax</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
European Starling	<i>Sturnus vulgaris</i>
House Finch	<i>Carpodacus mexicanus</i>
House Sparrow	<i>Passer domesticus</i>
Meadowlark	<i>Sturnella neglecta</i>
Morning Dove	<i>Zenaida macroura</i>
Northern Flicker	<i>Colaptes auratus</i>
Rock Pigeon	<i>Columba livia</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
various hummingbirds	

Table 3: Birds That Could Occupy Trees of Hill AFB Urban Forest

3.3.4 Water Quality

In areas of Hill AFB that are not heavily developed, runoff is allowed to infiltrate into the ground through overland flow or surface ditches, discharging to large unoccupied areas. In developed

areas, stormwater is conveyed to 15 retention or detention ponds within Hill AFB boundaries. Stormwater from retention ponds percolates and evaporates, resulting in zero discharge. Detention ponds are checked for presence of an oil sheen prior to discharging stormwater by manually opening the outfall valves.

No surface water bodies are present within the area occupied by the exiting dormitories or dining hall, or the area proposed for constructing the new dormitories or dining hall. Based on a review of the *Hill AFB Stormwater Management Plan - Municipal Stormwater Permit* (Stantec 2007), storm drains convey surface runoff from this area of Hill AFB to Pond 3 (a detention pond).

3.4 Description of Relevant Pre-Existing Environmental Factors

The Wasatch Front Regional Council (WFRC 2003) assessed earthquake hazards for Davis County, Utah, including the portion of Hill AFB that includes the alternatives discussed in this document. The Davis County liquefaction potential map shows this area of Hill AFB to be in the zone labeled as very low risk. The Davis County earthquake hazard map shows this area of Hill AFB to be outside of known fault zones. The Davis County landslide hazard map shows this area of Hill AFB to be outside of known landslide risk zones.

During scoping discussions and subsequent analysis, no other pre-existing environmental factors (e.g., hurricanes, tornados, floods, droughts) were identified for the proposed action.

3.5 Description of Areas Related to Cumulative Effects

For air quality, the area related to cumulative effects would include Hill AFB, Davis County, and Weber County.

For solid and hazardous wastes, the area related to cumulative effects would include Hill AFB.

For biological resources, the area related to cumulative effects would include Hill AFB.

For water quality, the area related to cumulative effects would include Hill AFB and waters downstream from the Hill AFB stormwater retention ponds.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This section discusses effects to the resources that were identified for detailed analysis in Section 1.7.2, and for which existing conditions were presented in Section 3.3. For each of these resources, the following analyses are presented:

- direct, indirect, and cumulative effects of the no action alternative; and
- direct, indirect, and cumulative effects of the proposed action (Alternative B).

4.2 Predicted Effects to Relevant Affected Resources of All Alternatives

4.2.1 Predicted Effects to Air Quality

4.2.1.1 Alternative A: No Action

The no action alternative would have no direct effects, no indirect effects, and no cumulative effects.

4.2.1.2 Alternative B (Proposed Action): Replace Dormitories and Dining Hall

Direct Effects Due to Construction

- **Fugitive Dust:** Fugitive emissions from construction activities would be controlled according to UAC Section R307-205, *Emission Standards: Fugitive Emissions and Fugitive Dust* and the Hill AFB *Fugitive Dust Plan*. Good housekeeping practices would be used to maintain construction opacity at less than 20 percent. Haul roads would be kept wet. Any soil that is deposited on nearby paved roads by construction vehicles would be removed from the roads and either returned to the site or placed in an appropriate on-base disposal facility.
- **Heavy Equipment:** The internal combustion engines of heavy equipment would generate emissions of VOCs, CO, NO_x, PM-10, PM-2.5, HAPs and oxides of sulfur (SO_x). Assumptions and estimated emissions for the construction period are listed in Table 4.

Data Assumptions							
Equipment Type	Diesel Emission Factor (lbs/hr)						
	VOC (HC)	CO	NOx	PM10	HAPs	SOx	
Asphalt Paver	0.28	1.24	2.96	0.24	0.05	0.25	
Bobcat Loader	0.14	0.67	1.00	0.10	0.01	0.08	
Cable Plow	0.59	3.75	4.49	0.59	0.08	0.38	
Compressor (boring)	0.25	1.62	1.94	0.25	0.04	0.16	
Concrete Truck	0.80	3.55	8.50	0.69	0.15	0.72	
Crane	2.14	6.96	17.08	2.39	0.33	1.54	
Dump Truck	0.63	2.04	6.98	0.58	0.16	0.65	
Flat Bed Truck	0.48	1.54	5.29	0.44	0.12	0.49	
Fork Lift	0.42	2.47	1.98	0.40	0.05	0.23	
Generator	0.02	0.10	0.12	0.02	0.00	0.01	
Loader/Backhoe	0.87	4.12	6.12	0.64	0.06	0.52	
Motored Grader	0.83	2.01	5.08	0.53	0.06	0.46	
Scraper	0.33	2.31	4.03	0.58	0.13	0.42	
Track Hoe	0.91	6.65	13.75	1.84	0.26	1.19	
Vibratory Compactor	0.38	1.44	4.31	0.36	0.09	0.46	
Water Truck	1.10	3.58	12.28	1.02	0.28	1.14	
Wheeled Dozer	0.46	1.48	5.08	0.35	0.08	0.49	
Note: VOCs = Hydrocarbons and HAPs = Aldehydes							
Source: Industry Horsepower Ratings and EPA 460/3-91-02							
Replace Dormitories and Dining Hall (Includes Demolition Activities)							
EQUIPMENT TYPE	HOURS OF OPERATION	Diesel Emissions (lbs)					
		VOC	CO	NOx	PM10	HAPs	SOx
Asphalt Paver	400	112.0	496.0	1184.0	96.0	20.0	100.0
Bobcat Loader	600	84.0	402.0	600.0	60.0	6.0	48.0
Cable Plow	96	56.6	360.0	431.0	56.6	7.7	36.5
Compressor (boring)	32	8.0	51.8	62.1	8.0	1.3	5.1
Concrete Truck	180	144.0	639.0	1530.0	124.2	27.0	129.6
Crane	540	1155.6	3758.4	9223.2	1290.6	178.2	831.6
Dump Truck	544	342.7	1109.8	3797.1	315.5	87.0	353.6
Flat Bed Truck	64	30.7	98.6	338.6	28.2	7.7	31.4
Fork Lift	24	10.1	59.3	47.5	9.6	1.2	5.5
Generator	36	0.7	3.6	4.3	0.7	0.0	0.4
Loader/Backhoe	720	626.4	2966.4	4406.4	460.8	43.2	374.4
Motored Grader	380	315.4	763.8	1930.4	201.4	22.8	174.8
Scraper	260	85.8	600.6	1047.8	150.8	33.8	109.2
Track Hoe	500	455.0	3325.0	6875.0	920.0	130.0	595.0
Vibratory Compactor	24	9.1	34.6	103.4	8.6	2.2	11.0
Water Truck	36	39.6	128.9	442.1	36.7	10.1	41.0
Wheeled Dozer	492	226.3	728.2	2499.4	172.2	39.4	241.1
TOTAL ESTIMATED EMISSIONS (lbs)		3702.1	15525.8	34522.3	3940.0	617.5	3088.2
TOTAL ESTIMATED EMISSIONS (tons)		1.85	7.76	17.26	1.97	0.31	1.54

Source of Hours: Steve Weed, Hill AFB Engineering

Table 4: Calculated Heavy Equipment Emissions

- Asbestos:** Prior to demolition of any structures, a detailed asbestos survey would be performed by Hill AFB employees and the results incorporated into specifications for the demolition contracts. Each asbestos abatement contractor would be verified by Hill AFB project managers as qualified to perform regulated asbestos abatement projects, and both the company and individual workers would possess all required certifications to perform the assigned tasks. Prior to beginning any asbestos abatement efforts, a notification of at least 10 working days would be provided to DAQ. Because all work would be performed in accordance with standards set by the Environmental Protection Agency (EPA) and DAQ, there would be no impacts to air quality associated with asbestos abatement.

Direct Effects Due to Operations

Based on information received during the scoping meeting held on January 14, 2009 and subsequent discussions with the proponent, the only air emissions due to operating the proposed action would be related to the natural gas fired furnace. Assumptions and estimated emissions for the operational period are listed in Table 5.

Data Assumptions						
Equipment Type	Natural Gas Emission Factor (pounds/MMSCF)					
	VOC	CO	NOx	PM10	HAPs	SOx
Natural Gas Furnace	5.5	40.0	94.0	7.6	0.01	0.6
Conversion Factors						
	Calculate Annual Fuel Consumption					
	172,360	172,360	172,360	172,360	172,360	172,360
Square Feet	172,360	172,360	172,360	172,360	172,360	172,360
BTU per hour per square foot	30	30	30	30	30	30
Heating hours per year	5,000	5,000	5,000	5,000	5,000	5,000
Million BTU per year	25,854	25,854	25,854	25,854	25,854	25,854
MMSCF per year	25.1	25.1	25.1	25.1	25.1	25.1
Operate Dormitories and Dining Hall						
Equipment Type	Natural Gas Emissions (pounds)					
	VOC	CO	NOx	PM10	HAPs	SOx
Natural Gas Furnace	138.3	1006.0	2364.1	191.1	0.3	15.1
TOTAL ESTIMATED EMISSIONS (pounds/year)	138	1006	2364	191	0.3	15
TOTAL ESTIMATED EMISSIONS (tons/year)	0.07	0.50	1.18	0.10	0.00	0.01

Notes:

MMSCF = Million Standard Cubic Feet

BTU = British Thermal Unit

1 cubic foot natural gas = 1,028 BTU

Source: http://www.eia.doe.gov/kids/energyfacts/science/energy_calculator.html#natgascalc

Office Space (as opposed to warehouse space): 15-45 BTU per hour per square foot

There are approximately 5,000 heating hours in an average year

Source: Dale R. Scott, P.E., SAIN Engineering Associates, Inc., 75CES/CEEE, Hill AFB, UT

Assume 30 BTU per hour per square foot for new construction

Emission factors: EPA values for residential furnaces

For natural gas, SOx assumed equal to SO2

Table 5: Calculated Operational Emissions

If required, prior to operating the proposed action, Hill AFB air quality managers would submit notices of intent, seven day notifications, and modification requests to DAQ. Hill AFB would not be allowed to operate the facilities until DAQ concurs that federal and state requirements are being met. Hill AFB ensures conformity with the CAA by complying with EPA regulations, Utah's SIP, and USAF conformity guidance.

Indirect Effects

Since contaminated groundwater in the vicinity of the proposed action is approximately 200 feet bgs, vapor intrusion affecting indoor air quality would not be expected for the proposed action.

During scoping and the detailed analysis, no other indirect effects related to air quality were identified for the proposed action.

Cumulative Effects

- **Construction:** Construction-related air emissions would be limited to a duration of several months. Comparing the magnitude of predicted construction-related air emissions (Table 4) to existing emissions for Hill AFB, Davis and Weber Counties (Table 2), there would not be significant cumulative effects to air quality associated with constructing the proposed action.
- **Operations:** Hill AFB air quality managers would ensure that long-term operation of the proposed action complies with the Hill AFB Title V Permit, any relevant approval orders, EPA regulations, and the Utah SIP. Any required air quality control devices would be installed and tested prior to allowing newly installed equipment to begin operating. Comparing the magnitude of predicted operational air emissions to existing emissions in Hill AFB, Davis and Weber Counties (Table 2), no significant cumulative effects to air quality were identified for operating the proposed action.

4.2.2 Predicted Effects to Solid and Hazardous Waste

4.2.2.1 Alternative A: No Action

With respect to solid and hazardous waste, the no action alternative would have no direct effects, no indirect effects, and no cumulative effects.

4.2.2.2 Alternative B (Proposed Action): Replace Dormitories and Dining Hall

Direct Effects Due to Construction

- **Waste Generation:** During the proposed construction activities, solid wastes expected to be generated would be construction debris consisting mainly of concrete, metal, and building materials. These items would be treated as uncontaminated trash and recycled when feasible. It is possible that equipment failure or a spill of fuel, lubricants, or construction-related chemicals could generate solid or hazardous wastes. In the event of a spill of regulated materials, Hill AFB environmental managers and their contractors would comply with all federal, state, and local spill reporting and cleanup requirements.
- **Demolition Debris:** Any friable asbestos detected during the detailed asbestos survey and subsequently removed during an abatement action, would be disposed in accordance with permit requirements at a disposal facility that is approved to accept friable asbestos. Loose flakes of lead-based paint (confirmed to contain lead by on-site inspections using a portable X-ray fluorescence analyzer) would be scraped, collected, and properly disposed at a permitted hazardous waste disposal facility. Dielectric fluid from any transformers or light ballasts suspected of containing PCBs would be tested, and the equipment would be properly disposed as either a regulated waste (PCB content of 50 parts per million [ppm] or more) or as uncontaminated trash (PCB content less than 50 ppm).

The uncontaminated demolition debris, non-friable asbestos, and lead-based paint that is still affixed to surfaces, would all be disposed off base, at a local construction debris (Class VI) landfill. Class VI landfills are allowed to accept construction and demolition waste, including: non-friable asbestos, lead-based paint that is still affixed to surfaces, and a quantity of 10 PCB-containing light ballasts per structure.

Thermostats that contain mercury switches would be collected by electricians from the Hill AFB facilities maintenance flight (75 CES/CEZ) prior to demolition activities. Any thermostats not saved for local reuse would be delivered to DRMO, which has an office on Hill AFB. DRMO would send the thermostats to be recycled, and a waste stream would not be created.

Any asphalt pavements surrounding the structures would be removed, collected, and would either be recycled, or stored and made available for reuse during future Hill AFB construction projects

- **Waste Management:** Hill AFB personnel have specified procedures for handling construction-related solid and hazardous wastes in their engineering construction specifications. The procedures are stated in Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection. All solid non-hazardous waste is collected and disposed or recycled on a routine basis. Samples from suspect wastes are analyzed for hazardous vs. non-hazardous determination. The suspect waste is safely stored while analytical results are pending. Hazardous wastes are stored at sites operated in accordance with the requirements of 40 CFR 265. The regulations require the generator to characterize hazardous wastes with analyses or process knowledge. Hazardous wastes are eventually labeled, transported, treated, and disposed in accordance with federal and state regulations.
- **Excavated Soils:** There is no known soil contamination at the location of the proposed action. However, excavations near areas of industrial activity on Hill AFB could potentially encounter contaminated soil. If unusual odors or soil discoloration were to be observed during any excavation or trenching necessary to complete the proposed action, the soil would be stored on plastic sheeting and the remedial manager from the Hill AFB Environmental Restoration Branch (75 CEG/CEVR) would be notified (Ms. Shannon Smith at 801-775-6913). Any excess clean soil would either be used as fill for another on-base project or placed in the on-base landfill. Any soil determined to be hazardous would be eventually labeled, transported, treated, and disposed in accordance with federal and state regulations. No soil would be taken off base without prior 75 CEG/CEVR written approval.

Direct Effects Due to Operations

Based on information received during the scoping meeting held on January 14, 2009, two issues related to solid and hazardous waste were identified for operating the proposed action.

- **Non-Regulated Solid Waste:** Uncontaminated office trash would be generated. Unless recycled, these non-regulated items would be disposed as uncontaminated trash. Recycling opportunities are likely to exist for aluminum, paper, and plastic items.
- **Regulated Liquid Waste:** Domestic sewage would flow to a sewage treatment plant operated by NDSD. A grease trap would provide pretreatment for liquid effluent from the dining hall kitchen.

Indirect Effects

During scoping and the detailed analysis, no indirect effects related to solid and hazardous waste were identified for the proposed action.

Cumulative Effects

Proper handling of solid and hazardous waste eliminates releases of contaminants to the environment or reduces such releases in conformity with legal limits. There are no significant cumulative solid or hazardous waste effects associated with the proposed action.

4.2.3 Predicted Effects to Biological Resources

4.2.3.1 Alternative A: No Action

With respect to biological resources, the no action alternative would have no direct effects, no indirect effects, and no cumulative effects. The 47-acre site would remain in its current condition of existing structures, pavements, and planted and maintained landscaping.

4.2.3.2 Alternative B (Proposed Action): Replace Dormitories and Dining Hall

Direct Effects Due to Construction

- **Demolition:** Demolishing existing facilities would be expected to temporarily remove much of the irrigated turf, hedges, and gardens currently present, thereby reducing the forage area for birds and displace rodents. It is hoped that many of the existing trees would be preserved.
- **Construction:** The proposed action would include replacing irrigated turf, hedges, and gardens. Any trees that could not be preserved would be replaced.
- **Mitigation:** If construction should occur during nesting season (usually April through August), a bird survey would be conducted, and an appropriate certificate of registration would be obtained to permit the taking of any protected species nesting in the trees within the proposed project area. To mitigate the removal of trees, new trees would be planted at a location approved by the Hill AFB natural resources manager in accordance with the Hill AFB tree removal and replacement plan (Hill 2007b). For other landscaped areas, preferred alternatives (such as using bark mulch and weed barriers instead of cobble rock surfaces) are presented in the Hill AFB *Integrated Natural Resources Management Plan* (Hill 2007b).

Direct Effects Due to Operations

Because landscaped areas and any trees that were removed would all be replaced, operating the proposed action would not create any different interaction with biological resources than currently exists in this area.

Indirect Effects

During scoping and the detailed analysis, no indirect effects related to biological resources were identified for the proposed action.

Cumulative Effects

Past actions at this site include removal of native sagebrush followed by addition of permanent structures pavements, and landscaping. The habitat has been changed from a native shrub dominated community to an improved (urban) habitat. Long-term existence of the proposed facilities would prevent succession of this area to a native state. However, due to the current urban nature of the site, no significant cumulative effects to biological resources were identified for the proposed action.

4.2.4 Predicted Effects to Water Quality

4.2.4.1 Alternative A: No Action

With respect to water quality, the no action alternative would have no direct effects, no indirect effects, and no cumulative effects.

4.2.4.2 Alternative B (Proposed Action): Replace Dormitories and Dining Hall

Direct Effects Due to Construction

Based on information provided by Hill AFB engineers, the land area to be disturbed would be approximately 47 acres in size. The proposed action would therefore be covered under Utah's general construction permit rule for stormwater compliance. Prior to initiating any construction activities, this permit must be obtained and erosion and sediment controls must be installed according to a stormwater pollution prevention plan (SWPPP). The SWPPP would specify measures to prevent soil from leaving the construction site on the wheels of construction vehicles, thereby controlling the addition of sediments to the storm drain system. The proponents would coordinate with the Hill AFB water quality manager (75CEV/CEGOC) prior to submitting an application for a Utah construction stormwater permit.

The SWPPP and Hill AFB construction specifications would require the contractor to restore the land to a non-erosive condition. All areas disturbed by excavation would be backfilled, and then either be covered by pavements, gravel, or re-planted, re-seeded, or sodded to prevent soil erosion.

Much of the involved 47 acres is currently occupied by structures and various pavements. The proposed action would not be expected to convert additional land to impermeable surfaces.

Increased stormwater runoff volume would not be expected. Nonetheless, the proposed action would comply with EISA Section 438 storm water runoff requirements for federal development projects. The sponsor of any development or redevelopment project involving a federal facility with a footprint that exceeds 5,000 square feet must use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Compliance with this requirement (by designing and constructing detention and/or retention structures) would eliminate downstream effects due to implementing the proposed action.

Direct Effects Due to Operations

The proposed facility would be subject to Utah's general multi-sector permit rule for stormwater compliance. The *Hill AFB Stormwater Management Plan - Municipal Stormwater Permit* establishes good housekeeping measures and other best management practices to prevent contamination of runoff. Pond 3 serves as a detention pond for this area of the base, and this pond is checked for an oil sheen prior to stormwater being discharged by manually opening the outfall valve.

Indirect Effects

During scoping and the detailed analysis, no indirect effects related to water quality were identified for the proposed action.

Cumulative Effects

On-base and off-base water quality would be protected during and after construction activities. Hill AFB water quality managers monitor the capacity of the retention and detention ponds relative to projected inflows from the 24-hour, 100-year storm event. Pond 3 would be dredged and/or expanded to provide additional capacity if necessary, or additional stormwater facilities would be constructed. There are no significant cumulative water quality effects associated with the proposed action.

4.3 Summary Comparison of Predicted Environmental Effects

Issue	Alternative A No Action	Alternative B Proposed Action
Air Quality	No effects	Construction equipment would create temporary emissions. Fugitive dust emissions would be mitigated. Air emissions from the natural gas fired furnace would be less than 1.2 tons per year for each criteria pollutant and for HAPs.
Solid and Hazardous Waste	No effects	If contaminated soils are identified, they would be properly handled during the construction process. Operational activities would generate uncontaminated trash and domestic sewage. Solid and liquid wastes containing regulated substances would all be properly contained, stored, transported, disposed, re-used, and/or recycled. Wastewater would be treated by NDSD.
Biological Resources	No effects	Site habitat has been previously affected by human activities and is now classified as improved (urban). The proposed action would temporarily remove much of the irrigated turf, hedges, and gardens currently present, thereby reducing the forage area for birds and displace rodents. It is hoped that many of the existing trees would be preserved. If any protected nesting birds should exist adjacent to construction activities, a certificate of registration would have to be obtained. The proposed action would include replacing irrigated turf, hedges, and gardens. Any trees that could not be preserved would be replaced.
Water Quality	No effects	During construction and operations, water quality would be protected by implementing stormwater management practices. Predevelopment hydrologic characteristics would be preserved.

Table 6: Summary Comparison of Predicted Environmental Effects

5.0 LIST OF PREPARERS

Streamline Consulting, LLC

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Randal B. Klein, P.E., Project Manager

Civil Engineer Group, Environmental Management Division, 75 CEG/CEV

7274 Wardleigh Road, Hill AFB UT 84056

Kay Winn, NEPA Manager, (801) 777-0383

Select Engineering Services

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Rudy Jones, Biologist, (801) 399-1858

EMAssist, Inc.

7274 Wardleigh Road, Hill AFB UT 84056

Mark Kaschmitter, Air Regulatory Analysis, (801) 775-2359

CH2M HILL, Inc.

7274 Wardleigh Road, Hill AFB UT 84056

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6.0 LIST OF PERSONS AND AGENCIES CONSULTED

Civil Engineer Group, Environmental Management Division, 75 CEG/CEV

7274 Wardleigh Road, Hill AFB UT 84056

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Jaynie Hirschi, Archaeologist, (801) 775-6920

Marcus Blood, Natural Resources Manager, (801) 777-4618

Russ Lawrence, Wildlife/Habitat Biologist, (801) 777-6972

Mike Petersen, Water Quality Manager, (801) 775-6904

Civil Engineering Organizations, 75 CEG and 75 CES

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Steven Weed, MILCON Project Programmer, 75 CEG/CEP, (801) 777-2580

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Select Engineering Services

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Erik Dettenmaier, Environmental Restoration Support, (801) 777-3804

SAIN Engineering Associates, Inc.

7302 Wardleigh Road, Hill AFB UT 84056

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7.0 REFERENCES

CFR: *Code of Federal Regulations*, US Government Printing Office, Office of the Federal Register (various sections and dates).

DAQ 2007: *“Utah’s Area Designation Recommendation for the 2006 PM_{2.5} NAAQS”*, Utah Division of Air Quality, December, 2007.

DAQ 2009a: *State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance (Updated July 2006)*, Utah Division of Air Quality Website, February, 2009.

DAQ 2009b: *Division of Air Quality Annual Report for 2008*, Utah Division of Air Quality, January, 2009.

Economic 2008: *Utah Labor Force: (Section 5 of the Utah Business & Economic Profile)*, Economic Development Corporation of Utah, January 31, 2008.

EPA 1991: *Nonroad Engine and Vehicle Emission Study - Report*, Table 2-07a, US Environmental Protection Agency, 1991.

EPA 1998: *National Air Pollutant Emission Trends, Procedures Document for 1900-1996*, US Environmental Protection Agency, Page 4-285, 1996.

Hill AFB: *Construction Specifications, Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection*, Hill AFB, UT, current version.

Hill 2007a: *Integrated Cultural Resources Management Plan*, Hill AFB, 2007.

Hill 2007b: *Integrated Natural Resources Management Plan*, Hill AFB, 2007.

Hill 2009: *2007 Annual Criteria and Toxic Pollutant Emission Inventory*, Hill AFB, provided by CH2M HILL, February, 2009.

Stantec 2007: *Hill AFB Stormwater Management Plan - Municipal Stormwater Permit*, Stantec Consulting, April, 2007.

WFRC 2003: *Natural Hazard Pre-Disaster Mitigation Plan, Utah’s Wasatch Front*, Wasatch Front Regional Council, December 2003.

APPENDIX A

CULTURAL RESOURCES FINDING OF NO ADVERSE EFFECT



State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

Department of Community and Culture

PALMER DePAULIS
Executive Director

State History

PHILIP F. NOTARIANNI
Division Director

February 19, 2009

Ms Jaynie Hirschi
Archaeologist
75th CEG/CEVOR
7274 Wardleigh Road
Hill Air Force Base UT 84056-5137

RE: Dormitory Construction at Hill Air Force Base

In reply please refer to Case No. 09-0306

Dear Ms Hirschi:

The Utah State Historic Preservation Office received information on the above-referenced project on February 9, 2009. Our office concurs with a determination of No Adverse Effect to historic properties as a result of the undertaking.

This information is provided to assist with Section 106 responsibilities as per §36CFR800. If you have any questions, please contact me at clhansen@utah.gov or (801) 533-3561.

Regards,

Chris Hansen
Preservation Planner



UTAH STATE HISTORICAL SOCIETY
ANTIQUITIES
HISTORIC PRESERVATION
RESEARCH CENTER & COLLECTIONS

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DEPARTMENT OF THE AIR FORCE
75TH CIVIL ENGINEER GROUP (AFMC)
HILL AIR FORCE BASE UTAH

9 February 2009

Dr. W. Robert James
Chief, Environmental Management Division
75 CEG/CEV
7274 Wardleigh Road
Hill Air Force Base, Utah 84056-5137

Mr. Chris Hansen
State Historic Preservation Office
300 Rio Grande
Salt Lake City, UT 84101

Dear Mr. Hansen

Hill Air Force Base (AFB) is currently proposing to construct numerous dormitories for enlisted United States Air Force (USAF) personnel. The proposed action is needed because the existing dormitories do not comply with current USAF housing standards. Several existing dormitories and a dining hall would be demolished and then replaced in the same area on Hill AFB. The Area of Potential Effect (APE) is approximately 53,386 square feet of property (Attachment 1, Area of Potential Effect for the Proposed Dormitories, Hill Air Force Base, Utah). The proposed action would include demolition of the following dormitories: 341, 345, 348, 349, 350, 351, 357, 358, 361, 363, 364, 365, 517, and 518. All of the indicated buildings were built between 1960-1987 and are not yet historic or Cold War Eligible. Building 519, a dining hall built in 1960, has been determined ineligible for the National Register of Historic Places (NRHP) (Attachment 2, SHPO Case No. 08-0579, Hill AFB Evaluations and Inventories 2008).

Within Hill AFB, three previous inventories have comprised cultural resources survey of 840 acres (U-91-WC-687m, U-95-WC-280p, and U-01-HL-0164m). Results from these projects include the recordation of one historic refuse dump (42Dv51) and two prehistoric isolates, all determined ineligible for listing in the NRHP. Inventory efforts have resulted in the survey of 12.5 percent of the total area of Hill AFB. None of the previous inventories fall within the APE of the current proposed project.

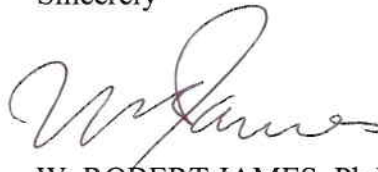
Building construction and associated infrastructure will encompass the entire APE of the current project. Given the lack of previous findings and the extensive development and disturbance of Hill AFB, the potential for archaeological historic properties is extremely low. However, if any archaeological resources are found during construction, ground-disturbing activities in the immediate vicinity will cease, the Hill AFB Cultural Resources Program will be notified, and the unanticipated discovery of archaeological deposits procedures shall be implemented with direction from the Hill AFB Cultural Resources Program and in accordance

with the Hill AFB Integrated Cultural Resources Management Plan (Attachment 3, Unanticipated Discovery of Archaeological Deposits).

Hill AFB has determined the proposed project will have no adverse effect to historic properties [36 CFR §800.4(d)(1)]. I request your concurrence in these determinations as specified in 36 CFR §800.

An Environmental Assessment has been prepared for the proposed dormitory reconstruction. If you would like a copy of this document to review, or should you or your staff have any questions about the project, please contact our archaeologist, Ms. Jaynie Hirschi, 75 CEG/CEVOR, at (801) 775-6920 or at jaynie.hirschi@hill.af.mil.

Sincerely

A handwritten signature in dark ink, appearing to read 'W. Robert James', is written over a faint, circular official seal.

W. ROBERT JAMES, Ph.D., P.E.
Chief, Environmental Management Division
75th Civil Engineer Group

Attachments:

1. Area of Potential Effect for Proposed Dormitories, Hill Air Force Base, Utah
2. SHPO Case No. 08-0579, Hill AFB Evaluations and Inventories 2008
3. Unanticipated Discovery of Archaeological Deposits



State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

Department of Community and Culture

PALMER DePAULIS
Executive Director

State History

PHILIP F. NOTARIANNI
Division Director

April 9, 2008

Ms Jaynie Hirschi
75 CEG/CEVOR
7274 Wardleigh Road
Hill Air Force Base UT 84056-5137

RE: HAFB Evaluations and Inventories 2008

In Reply Please Refer to Case No. 08-0579

Dear Ms Hirschi:

The Utah State Historic Preservation Office received materials on the above-referenced project on February 28, 2008. The Utah SHPO is comfortable with and concurs with Hill Air Force Base's determinations of eligibility based on the information sent to our office and recommendations of the historic buildings and structures reports regarding the districts in HAFB proper—Ogden Arsenal/Ogden AMA Historic District, Hill Field Historic Housing Historic District, and the Strategic Air Command Historic District; the two HAFB districts outside of HAFB proper—Little Mountain Text Annex Historic District and the Boulder Seismological Research Site Historic District; and individual buildings throughout HAFB (including individual buildings located at the Utah Test and Training Range). We appreciate your efforts in taking into account Utah's historic resources as HAFB plans and moves forward with projects. We will add these reports and forms to our files. We look forward to working with you further in putting all of this data into our Historic Sites Database.

This information is provided to assist with Section 106 responsibilities as per §36CFR800. If you have questions, please contact me at clhansen@utah.gov or (801) 533-3561.

Regards,

Chris Hansen
Preservation Planner



UTAH STATE HISTORICAL SOCIETY
ANTIQUITIES
HISTORIC PRESERVATION
RESEARCH CENTER & COLLECTIONS

Standard Operating Procedure

UNANTICIPATED DISCOVERY OF ARCHAEOLOGICAL DEPOSITS

APPLICABLE LAWS AND REGULATIONS

- ◆ National Historic Preservation Act
- ◆ National Environmental Policy Act
- ◆ Native American Graves Protection and Repatriation Act
- ◆ AFI 32-7065 (June 2004), *Cultural Resources Management Program*

OVERVIEW

All undertakings that disturb the ground surface have the potential to discover buried and previously unknown archaeological deposits. The accidental discoveries of archaeological deposits during an undertaking can include but are not limited to:

- ◆ Undiscovered/undocumented structural and engineering features; and
- ◆ Undiscovered/undocumented archaeological resources such as foundation remains, burials, artifacts, or other evidence of human occupation.

POLICY

When cultural resources are discovered during the construction of any undertaking or ground-disturbing activities, Hill AFB shall:

- ◆ Evaluate such deposits for NRHP eligibility.
- ◆ Treat the site as potentially eligible and avoid the site insofar as possible until an NRHP eligibility determination is made.
- ◆ Make reasonable efforts to minimize harm to the property until the Section 106 process is completed.
- ◆ **The BHPO will ensure that the provisions of NAGPRA are implemented first if any unanticipated discovery includes human remains, funerary objects, or American Indian sacred objects (see SOP #6).**

PROCEDURE

Step 1: Work shall cease in the area of the discovery (Figure 5-5). Work may continue in other areas.

- ◆ The property is to be treated as eligible and avoided until an eligibility determination is made. Hill AFB will continue to make reasonable efforts to avoid or minimize harm to

Further construction activities in the vicinity of the site will be suspended until an agreed-upon testing strategy has been carried out and sufficient data have been gathered to allow a determination of eligibility. The size of the area in which work should be stopped shall be determined in consultation with the **BHPO**.

the property until the Section 106 process is completed.

Step 2: Immediately following the discovery, the **Project Manager** shall notify the installation **BHPO**.

Step 3: The **BHPO** or a professional archaeologist shall make a field evaluation of the context of the deposit and its probable age and significance, record the findings in writing, and document with appropriate photographs and drawings.

- ◆ If disturbance of the deposits is minimal and the excavation can be relocated to avoid the site, the **BHPO** will file appropriate site forms in a routine manner.
- ◆ If the excavation cannot be relocated, the **BHPO** shall notify the office of the **SHPO** to report the discovery and to initiate an expedited consultation.

The Section 106 review process is initiated at this point.

- ◆ If the deposits are determined to be ineligible for inclusion in the NRHP, then Hill AFB **BHPO** will prepare a memorandum for record and the construction may proceed.
- ◆ If the existing information is inadequate for an NRHP eligibility determination, Hill AFB **BHPO** shall develop an emergency testing plan in coordination with the SHPO.

Step 4: Hill AFB shall have qualified personnel conduct test excavations of the deposits to determine NRHP eligibility.

- ◆ Hill AFB BHPO, in consultation with the SHPO, will determine appropriate methodology for NRHP eligibility determination.
- ◆ If the SHPO and Hill AFB agree that the deposits are ineligible for inclusion in the NRHP, then work on the undertaking may proceed.
- ◆ If the deposits appear to be eligible, or Hill AFB and the SHPO cannot agree on the question of eligibility, then Hill AFB shall implement alternative actions, depending on the urgency of the proposed action.
 - Hill AFB may relocate the project to avoid the adverse effect.
 - Hill AFB may request the Keeper of the National Register to provide a determination.
 - Hill AFB may proceed with a data recovery plan under a MOA developed in coordination with the SHPO and possibly the ACHP and interested parties.
 - **Hill AFB may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking on the property to the extent feasible and the comments of the SHPO, ACHP, and interested parties. Interim comments must be provided to Hill AFB within 48 hours; final comments must be provided within 30 days.**

